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| 09/702,292      | 10/30/2000  | Wen-Yin Liu          | MS1-604US           | 1425             |

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EXAMINER

TO, BAOQUOC N

| ART UNIT | PAPER NUMBER |
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2172

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No

09/702,292

Applicant(s)

LIU ET AL.

Examiner

Baoquoc N To

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-15, 20-26 and 28-42 is/are pending in the application.
- 4a) Of the above claim(s) 1, 16-19 and 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-15, 20-26 and 28-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8. 6) ☐ Other:

### **DETAILED ACTION**

1. Claims 1-41 are pending in this application and claims 1, 16-19 and 27 are canceled and claim 42 is newly added filed in amendment on 10/03/03

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 12, 20, 24, 32 and 38-39 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 2-3 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsushi et al. (A flexible content-based image retrieval system with combined scene description word, page 201-208, June 17-23, 1996, Multimedia Computing and System) in view of Barber et al. (US Patent No. 5,579,471).

Regarding on claims 1, 11 and 28, Atsushi teaches a method comprising:

Initiating a search for images based on a at least one query keyword in an query (page 202, left column, lines 15-22); and

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identifying, during the search, first images having associated keywords that match the query keyword and second images that contain low-level features similar to those of the first images (page 202, left column, lines 15-22);

Atsushi does not explicitly teach ranking of the first and second images. Barber teaches "ranking the images according to the results" (col. 12, lines 30-33). This teaches the images are ranked according to their relevancy. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the ranking method in Barber into Atsushi to allow the relevant images to be displayed in the ordering of match.

Regarding on claims 3 and 31, Atsushi teaches presenting the first and second images (fig. 5).

Regarding claim 29, Atsushi teaches a query handler comprises a natural language parser (page 202, left column, lines 15-22).

Regarding on claim 30, Atsushi teaches the query handler comprises:

A parser to parse text-based queries (page 202, left column, lines 15-22); and

A concept hierarchy to define various categories of images (page 2, left column, lines 15-22).

4. Claims 4-10, 20-23, 32-37 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atsushi et al. (A flexible content-based image retrieval system with combined scene description word, page 201-208, June 17-23, 1996, Multimedia Computing and System) in view of He et al. (US Patent No. 6,557,042 B1).

Regarding on claims 4 and 42, Atsushi teaches a method comprising:

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Initiating a search for images based on at least one query keyword in query (page 202, left column, lines 15-22);

Identifying, during a search, first images having associated keywords that match the query keyword and second images that contain low-level features similar to those of the first images (page 202, left column, lines 15-22); and

presenting the first and second images to a user (page 104, left column, fig. 5);

Atsushi does not explicitly teach monitoring feedback from the user as to which of the first and second images are relevant to the query. He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for e positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the increasing the score by two when there are positive feedbacks from the user means annotating the segment by two of the marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

Regarding on claims 5 and 32, Atsushi teaches a method comprising:

Initiating a search for images based on at least one query keyword in query (page 202, left column, lines 15-22);

Identifying, during a search, first images having associated keywords that match the query keyword and second images that contain low-level features similar to those of the first images (page 202, left column, lines 15-22); and

presenting the first and second images to a user (page 104, left column, fig. 5)

Atsushi does not explicitly teach receiving feedback from the user as to whether the first and second images are relevant to the query; and learning how the first and second images are identified based on the feedback from the user. On the other hand, He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for e positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the increasing the score by two when there are positive feedbacks from the user means annotating the segment by two of the marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

Regarding on claims 6 and 33, Atsushi teaches presenting the first and second images to a user (page 104, left column, fig. 5). He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for e positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the increasing the score by two when there are positive feedbacks from the user means annotating the segment by two of the marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

Regarding on claims 7 and 34, He teaches presenting the first and second images to a user (page 104, left column, fig. 5);

receiving feedback from the user as to which of the first and second images are relevant to the query (col. 9, lines 49-64); and

assigning a large weight to an association between the query keyword and the images deemed relevant by the user (col. 9, lines 49-64).

Regarding on claims 8 and 35, Cullen teaches grouping the low-level features of the images deemed by relevant by the user (col. 4, lines 18-27).

Regarding on claims 9 and 36, He teaches presenting the first and second images to a user (page 104, left column, fig. 5);

receiving feedback from the user identifying an example image as less or irrelevant to the query for refinement of the search (col. 9, lines 51-64); and

assign a small weight to an association between the query keyword and the example image (col. 9, lines 59-64).

Regarding on claims 10 and 37, Atsushi teaches identifying additional images with low-level features similar to those of the example image (fig. 5).

Regarding on claims 20 and 23, Atsushi teaches the a method comprising:

Presenting a result set of images that are returned that are returned from an image retrieval search of query having at least one keyword (col. 9, lines 40-50);

Atsushi does not explicitly teach monitoring feedback from a user as to whether the image in the result set are relevant to the query; in an event that the user selects at least one image as being relevant to the query, associating the keyword in the query with the selected image to form a first keyword-image association and assigning a comparatively large weight to the first key-image association; and in an event that the user identifies an example image for refinement of the search, associating the keyword in the query with the example image to form a second keyword-image association and assigning a comparatively small weight to the second keyword-image association. He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification



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may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for a positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the increasing the score by two when there are positive feedbacks from the user means annotating the segment by two of the marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

Regarding on claim 21, Atsushi teaches conducting both content-based image retrieval and semantic-based image retrieval (page 204, right column, lines 25-31).

Regarding on claim 22, He teaches presenting the result set of images in a user interface, the user interface facilitating the user feedback by allowing the user to indicate which images are more relevance and which images are less relevant (col. 9, lines 51-56).

5. Claims 12-15 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (US. Patent No. 5,579,471) in view of He et al. (US. Patent No. 6,557,042).

Regarding on claims 12, 15, 39 and 41, Barber teaches a method comprising:

Permitting entry of both keyword-based queries (keyword) and content-based queries (image query) (col. 3, lines 23-38);

Finding images using both semantic-based image retrieval and low-level feature-based image retrieval (col. 5, lines 30-42);

Presenting the images to a user so that the user can indicate whether the images are relevant (col. 5, lines 30-42); and

Barber does not explicitly teach conducting semantic-based relevance feedback and low-level feature-based relevance feedback in an integrated fashion. However, He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for e positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the increasing the score by two when there are positive feedbacks from the user means annotating the segment by two of the marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

Regarding on claims 13 and 40, Barber teaches ranking the images (col. 12, lines 30-33).

Regarding on claim 14, Barber teaches using images indicated as being relevant to find additional images (col. 14, lines 46-47).

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over He et al. (US. Patent No. 5,899,999).

Regarding on claim 38, He teaches a database structure stored on one or more computer readable media comprising:

Multiple image files (col. 3, lines 35-45);

Multiple keywords (col. 4, lines 9-11); and

A sematic network to associate the keywords with the image files, the semantic network defining individual keyword-image links that associate a particular keyword with a particular image file, each keyword-image link having a weight indicative how relevant the particular key word is to the particular image file. However, He teaches, "there are may be a relationship defined between a "marketing" group and an "engineering group, such that user feedback from a user in the marketing group also modifies the corresponding segment score in the engineering group. This modification may be the same (e.g., increase both scores by two for positive feedback), or different (e.g., for e positive feedback increase the segment score in the user's group by two and increase the segment score in the related group by one)" (col. 9, lines 56-64). This teaches the association between the segments and marketing and engineering group. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to include the user's feedback to modify the scores to annotate the marketing and engineering group to the multimedia object segment to allow the retrieval of the same segment that relevant to these marketing and engineering.

7. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nojima (US. Patent No. 6,442,438) in view of Narayanaswami et al. (US. Patent No. 6,504,571).

Regarding on claim 24, Nojima teaches a method comprising:

Computing, for each category, a representative feature vectors of a set of existing images with the category (col. 4, lines 30-41);

Determining a set of representative keywords that are associated with the existing images in each category (col. 5, lines 50-57);

Comparing, for each new image, the low-level feature vectors of the new image to the representative feature vectors of the existing images in each category to identify a closet matching category (col. 1, lines 19-37); and

Nojima does not explicitly teach labeling the new image with the set of representative keywords associated the closet matching category; however, Narayanaswami teaches, "the system also includes an image annotation module 220, operatively connected between the user interface/display 202 and the images from the image database 216, which allows a user to retrieve digital images with additional parameters or keywords such as names and descriptions of objects in the images" (col. 8, lines 52-58). This teaches the annotation module annotates the keywords to the images. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to combine the teaching Nojima and Narayanaswami because utilizing the annotation module to annotate the keyword to the images would

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allow the images to be retrieved by other keywords that are more descriptive to the images.

Regarding on claim 25, Narayanaswami teaches using feedback to selectively add and/or remove (annotating means adding) keywords from the new image (col. 8, lines 52-58).

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nojima (US. Patent No. 6,442,438) in view of Narayanaswami et al. (US. Patent No. 6,504,571) and futher in view of Kopec et al. (US. Patent No. 5,594,809).

Regarding on claim 26, Both Nojima and Narayanaswami teach placing the labeled new images into a holding category (col. 8, lines 53-57).

Both Nojima do not explicitly teach evaluating the labeled new images in the holding category to determine if any of the keywords associated with the labeled new image match the representative keywords from each category; and assigning the labeled new image to the category that best matches the keywords associated with the labeled with the labeled new image.

Spec teaches evaluating the labeled new images in the holding category to determine if any of the keywords associated with the labeled new image match the representative keywords from each category (col. 7, lines 63-65); and assigning (input keyword image) the labeled new image to the category that best matches the keywords associated with the labeled with the labeled new image (col. 7, lines 64-65).

Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to employ the teaching of Kopec into Nojima and

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Narayanaswami in order to match the image with the keyword to allow the user search for these images with the same keyword.

9. Claim 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nojima (US. Patent No. 6,442,438) in view of Narayanaswami et al. (US. Patent No. 6,504,571) and further in view of Stuckey et al. (US. Patent No. 5,721,938).

Regarding on claim 29, both Nojima and Narayanaswami do not explicitly teach the query handler comprises a natural language parser; however, Stuckey teaches, "present program provides a natural text parser, which may be used for all natural languages" (col. 3, lines 22-24). This teaches the query is inputted by the natural language. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to modify the teaching of Stuckey into Nojima and Narayanaswami because utilizing the natural language parser would allow the user to input the natural language to search and to provide a user-friendly system.

Regarding on claim 30, Stuckey teaches the query handler comprises:

A parser to parse text-based queries (col. 3, lines 22-24); and

A concept hierarchy to define various categories of images (col. 12, lines 22-25).

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Baoquoc N. To whose telephone number is (703) 305-1949 or via e-mail BaoquocN.To@uspto.gov. The examiner can normally be reached on Monday-Friday: 8:00 AM – 4:30 PM, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached at (703) 305-9790.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
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The fax numbers for the organization where this application or proceeding is assigned are as follow:

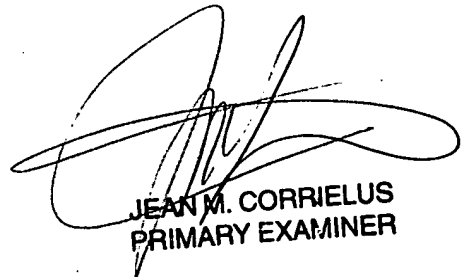
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Baoquoc N. To

Dec 23, 2003



JEAN M. CORRIELUS  
PRIMARY EXAMINER